APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,499	12/20/2001	Jon Eric Okholm	6533/53656	2002

30505   7590   12/20/2005

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EXAMINER
DYKE, KERRI M

ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No. 𝕍	Applicant(s)
Office Action Summary	10/027,499	OKHOLM ET AL.
	Examiner	Art Unit	
	Kerri M. Dyke	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 November 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,2,4-14 and 16-31</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,2,4-14 and 16-31</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>28 November 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail. Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Claims 1, 18, 20, and 26 have been amended.

2.   Claims 3 and 15 have been canceled.

3.   Claims 1-2, 4-14, and 16-31 are pending.

Response to Arguments

4.   Applicant's arguments with respect to claims 1-2, 4-14, and 16-31 have been considered

but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 1-8, 11, 14, 16-19, and 21-31 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cisco NetFlow, which is explained in several documents including "NetFlow

Services and Applications," (referred to as NetFlow) in view of Jalalian et al. (US 5,548,722).

7.   In regards to claim 1, Cisco NetFlow discloses a method facilitating the configuration of

parameters controlling utilization of a network resource, comprising the steps of: monitoring

utilization of a network resource with respect to a plurality of utilization classes; displaying the

most significant utilization classes based on a network statistic; and, facilitating association of a

displayed utilization class with a control parameter operative to control utilization of the network

resource wherein the facilitating association includes providing a user interface allowing for

selection of a displayed utilization class and a desired control parameter.. On the bottom of page

1 and top of page 2 of NetFlow it is disclosed that NetFlow is configured to monitor and report

network utilization of a resource with respect to a plurality of utilization classes. Some of the

utilization classes are shown on page 7 of NetFlow, where it is disclosed the traffic can be sorted

by type of IP protocol used. The network statistics are displayed to a manager using the NetFlow

FlowCollector User Interface as disclosed on page 21. On page 24 of NetFlow it is disclosed

that the top N most significant classes may be chosen for viewing and processing. Network

statistics include information such as source and destination IP addresses, port numbers, and

number of packets in a data flow. Pages 17-18 disclose that network statistics are included in the

aggregation records. It is also disclosed on page 21 of NetFlow that the configuration, i.e.

control, parameters can be adjusted using the interface. Page 23 discloses that the user can

retrieve and display collected data.

Netflow does not disclose wherein the user interface displays a predefined set of control

parameters selectable by a user.

Jalalian discloses uses a drop-down menu with a predefined set of parameters in column

20 lines 5-13. Jalalian does not disclose that the predefined set of parameters are related to a set

of control parameters or bandwidth control parameters, but setting a priority and using the

priority to allocate resources is so well known in the art that there are several whole subclasses

devoted to the description of various techniques of resource allocation based upon assigned

control parameters.

It would have been obvious to one of ordinary skill in the art to use Jalalian's drop-down

menu within Netflow's configuration method because doing so gives the user the impression that

services/devices are quickly choosible and psychologically approximate even if they are physically distant, as disclosed by Jalalian in column 20 lines 9-13.

8.   In regards to claim 2, Netflow and Jalalian discloses the method of claim 1 further comprising the step of: facilitating selection of additional utilization classes not presented in the displaying step and association of control parameters to the additional utilization classes. Page 21 of NetFlow Services discloses that the interface can be used to define and modify configuration parameters. Page 23 discloses that the user can retrieve and display collected data. It is inherent that additional data can be displayed simply by repeating the retrieval process. The "Get TopN" function described on page 24 could also be run again using a larger N to display more utilization classes than were previously available. Configuration parameters could then be set for these new classes.

9.   In regards to claim 4, Netflow and Jalalian discloses the method of claim 2 wherein the facilitating step comprises the steps of providing a user interface allowing for selection of a displayed utilization class and a desired control parameter; and wherein the user interface allows for selection of additional utilization classes and configuration of desired allocations of the network resource for selected additional utilization classes. Page 21 of NetFlow Services discloses that the interface can be used to define and modify configuration parameters. Page 23 discloses that the user can retrieve and display collected data. It is inherent that additional data can be displayed simply by repeating the retrieval process. The "Get TopN" function described on page 24 could also be run again using a larger N to display more utilization classes than were previously available. Configuration parameters could then be set for these new classes.

10.   In regards to claim 5, Netflow and Jalalian discloses the method of claim 1 further

comprising the step of upon selection by a user, associating a selected utilization class with

control parameter selected by the user. Page 21 of NetFlow disclosed that the user could define

new configuration parameters. It is inherent that these control parameters would be associated

with a utilization class in order to function.

11.   In regards to claim 6, Netflow and Jalalian discloses the method of claim 1 wherein the

displaying step further comprises providing a user interface that displays the most significant

utilization classes based on a utilization statistic; wherein the user interface allows for selection

of a displayed utilization class and a desired control parameter. Pages 21 and 23 disclose that the

interface can display selected utilization classes and control parameters. Page 24 discloses the

"Get TopN" function, which allows for the selection of the top N utilization classes.

12.   In regards to claim 7, Netflow and Jalalian discloses the method of claim 6 wherein the

user interface further allows for selection of additional utilization classes not presented in the

displaying step and configuration of desired control parameters for selected additional utilization

classes. Page 21 of NetFlow discloses that the interface can be used to define and modify

configuration parameters. Page 23 discloses that the network manager can select any data set for

viewing. The "Get TopN" function described on page 24 could also be run again using a larger

N to display more utilization classes than were previously available. Configuration parameters

could then be set for these new classes.

13.   In regards to claim 11, Netflow and Jalalian discloses the method of claim 6 wherein the

user interface displays the most significant utilization classes in an order relative to

corresponding values of the network statistic. Page 24 discloses the "Get TopN" feature, which

displays the top N data flows based upon the chosen network statistic. These flows can then be sorted to display in order depending upon, for example, the number of bytes or packets, also disclosed on page 24.

14.   In regards to claim 8, Netflow and Jalalian discloses the method of claim 1 wherein the most significant utilization classes are displayed in an order relative to corresponding values of the network statistic. Page 24 discloses the "Get TopN" feature, which displays the top N data flows based upon the chosen network statistic. These flows can then be sorted to display in order depending upon, for example, the number of bytes or packets, also disclosed on page 24.

15.   In regards to claim 14, Netflow and Jalalian discloses the method of claim 1 further comprising the steps of providing a set of selectable network statistics; receiving a selected utilization statistic from a user; and, wherein the displaying step comprises displaying the most significant utilization classes based on the selected network statistic. Network statistics include information such as source and destination IP addresses, port numbers, and number of packets in a data flow. Pages 17-18 disclose that network statistics are included in the aggregation records. On page 5 it is also disclosed that the traffic statistics are collected, i.e. received. Page 9 discloses that the display is equipped with a "Get TopN" feature, which allows for the display of the top, i.e. most significant, flows based on the selected network statistic.

16.   In regards to claim 16, Netflow and Jalalian disclose the method of claim 1 wherein the network statistic is a utilization statistic. Network statistics include information such as source and destination IP addresses, port numbers, and number of packets in a data flow. Pages 17-18 disclose that network statistics are included in the aggregation records. These statistics include total bytes and number of packets in a dataflow, which are inherently utilization statistics.

Therefore, utilization statistics are inherently available display to the network manager using the interface.

17.   In regards to claim 17, Netflow and Jalalian disclose the method of claim 1 wherein the network statistic is computed over a given analysis interval; and wherein the method further comprises the steps of: allowing for selection of an analysis interval. Page 24 discusses the time bar, which can be adjusted to establish an applicable time period for analysis.

18.   Claim 18 is for the method of claim 1 where the network resource is specified to be bandwidth. A utilization class is a traffic class. Page 2 discloses the ways that the NetFlow system can be used for bandwidth management. The user monitoring and profiling section discloses that the utilization of resources can be observed and then better allocated using NetFlow. Bandwidth is inherently one of these resources. Without bandwidth no work can be down over a network. On the bottom of page 1 and top of page 2 of NetFlow it is disclosed that the NetFlow system is configured to monitor and report network utilization of a resource with respect to a plurality of utilization classes. Some of the utilization classes are shown on page 7 of NetFlow, where it is disclosed the traffic can be sorted by type of IP protocol used. The network statistics are displayed to a manager using the NetFlow FlowCollector User Interface as disclosed on pages 21 and 23. On page 24 it is disclosed that the top N most significant classes may be chosen for viewing and processing. Network statistics include information such as source and destination IP addresses, port numbers, and number of packets in a data flow. Pages 17-18 disclose that network statistics are included in the aggregation record. It is also disclosed on page 21 that the configuration, i.e. control, parameters can be adjusted using the interface.

Netflow does not disclose wherein facilitating association includes displaying a predefined set of selectable bandwidth control categories.

Jalalian discloses uses a drop-down menu with a predefined set of parameters in column 20 lines 5-13. Jalalian does not disclose that the predefined set of parameters are related to a set of control parameters or bandwidth control parameters, but setting a priority and using the priority to allocate resources is so well known in the art that there are several whole subclasses devoted to the description of various techniques of resource allocation based upon assigned control parameters.

It would have been obvious to one of ordinary skill in the art to use Jalalian's drop-down menu within Netflow's configuration method because doing so gives the user the impression that services/devices are quickly choosible and psychologically approximate even if they are physically distant, as disclosed by Jalalian in column 20 lines 9-13.

19.   Claim 19 is essentially for the method of claim 2 where the network resource is specified to be bandwidth and a utilization class is referred to as a traffic class. Page 2 discloses the ways that the NetFlow system can be used for bandwidth management. The user monitoring and profiling section discloses that the utilization of resources can be observed and then better allocated using NetFlow. Bandwidth is inherently one of these resources. Without bandwidth no work can be down over a network. Page 21 of NetFlow Services discloses that the interface can be used to define and modify configuration parameters. Page 23 discloses that the user can retrieve and display collected data. It is inherent that additional data can be displayed simply by repeating the retrieval process. The "Get TopN" function described on page 24 could also be run

again using a larger N to display more utilization classes than were previously available.

Configuration parameters could then be set for these new classes.

20.   In regards to claim 20, Netflow and Jalalian disclose the method of claim 18 wherein

each bandwidth control category maps to a set of bandwidth utilization controls. Jalalian

discloses uses a drop-down menu with a predefined set of parameters in column 20 lines 5-13.

Jalalian does not disclose that the predefined set of parameters are related to a set of control

parameters or bandwidth control parameters, but setting a priority and using the priority to

allocate resources is so well known in the art that there are several whole subclasses devoted to

the description of various techniques of resource allocation based upon assigned control

parameters.

21.   In regards to claim 21, Netflow and Jalalian disclose the method of claim 18 wherein the

bandwidth utilization control is implemented by an aggregate data flow bandwidth utilization

control. Page 21 discusses the configuration parameters and pages 17-18 disclose the different

aggregation schemes available, including by protocol type.

22.   In regards to claim 22, Netflow and Jalalian disclose the method of claim 18 wherein the

bandwidth utilization control is implemented by a per-flow bandwidth utilization control. On

page 4 it is disclosed that aggregated NetFlow services can be used simultaneously with

traditional, i.e. per-user NetFlow services.

23.   In regards to claim 23, Netflow and Jalalian discloses the method of claim 18 wherein the

bandwidth utilization control is implemented by at least one aggregate data flow bandwidth

utilization control and at least one per-flow bandwidth utilization control. On page 4 it is

disclosed that aggregated NetFlow services can be used simultaneously with traditional, i.e. per-user NetFlow services.

24.   In regards to claim 24, Netflow and Jalalian discloses the method of claim 18 wherein the monitoring step further comprises the step of automatically creating new traffic classes in response to data flows. Page 2 discloses that NetFlow automatically determines if a packet is part of an existing flow. If it is not a new flow is created. Parts of the packet, such as IP protocol, are monitored for filtering and aggregation purposes, as disclosed on pages 5-7. It is inherent that a new traffic class will be created if necessary, such as a for a new IP protocol.

25.   In regards to claim 25, Netflow and Jalalian disclose the method of claim 18 wherein the network statistic is computed over a given analysis interval; and wherein the method further comprises the steps of: allowing for selection of an analysis interval. Page 24 discloses the time bar, which can be adjusted to establish an applicable time period for analysis.

26.   Claim 26 is for an apparatus that contains a traffic discovery engine. This traffic discovery engine is operative to accomplish the method of claim 18. NetFlow is a program that is operative to accomplish the method of claim 18. It can inherently be called a traffic discovery engine. On pages 11-12 the apparatuses that can contain the NetFlow program are disclosed.

Netflow does not disclose wherein the user interface module is operative to display a predefined set of selectable bandwidth control parameters.

Jalalian discloses uses a drop-down menu with a predefined set of parameters in column 20 lines 5-13. Jalalian does not disclose that the predefined set of parameters are related to a set of control parameters or bandwidth control parameters, but setting a priority and using the priority to allocate resources is so well known in the art that there are several whole subclasses

devoted to the description of various techniques of resource allocation based upon assigned

control parameters.

It would have been obvious to one of ordinary skill in the art to use Jalalian's drop-down

menu within Netflow's configuration method because doing so gives the user the impression that

services/devices are quickly choosible and psychologically approximate even if they are

physically distant, as disclosed by Jalalian in column 20 lines 9-13.

27.   In regards to claim 27, Netflow and Jalalian disclose the apparatus of claim 26 wherein

the bandwidth utilization statistic is selectable by a user. Network statistics include information

such as source and destination IP addresses, port numbers, and number of packets in a data flow.

Pages 17-18 disclose that network statistics are included in the aggregation records. On page 3 it

is disclosed that the user can select data sets, which are a collection of traffic information. It is

inherent that the user could select a data set that pertains specifically to the bandwidth traffic

statistics.

28.   In regards to claim 28, Netflow and Jalalian disclose the apparatus of claim 26 wherein

the bandwidth utilization statistic is computed over an analysis interval. Page 24 discloses the

time bar, which can be adjusted to establish an applicable time period for analysis.

29.   In regards to claim 29, Netflow and Jalalian disclose the apparatus of claim 28 wherein

the analysis interval is selectable by a user. Page 24 discloses the time bar, which can be

adjusted to establish an applicable time period for analysis.

30.   In regards to claim 30, Netflow and Jalalian disclose the apparatus of claim 26 wherein

the traffic discovery engine is further operative to create new traffic classes in response to data

flows. Page 2 discloses that NetFlow automatically determines if a packet is part of an existing

flow. If it is not a new flow is created. Parts of the packet, such as IP protocol, are monitored

for filtering and aggregation purposes, as disclosed on pages 5-7. It is inherent that a new traffic

class will be created if necessary, such as a for a new IP protocol.

31.   In regards to claim 31, Netflow and Jalalian disclose the apparatus of claim 26 wherein

the user interface allows for the display of additional traffic classes. Page 23 discloses that the

network manager can select any data set for viewing, which includes additional traffic classes.

32.   Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over

"NetFlow Services and Applications" (referred to as NetFlow) in view of Jalalian et al. (US

5,548,722) further in view of NetFlow FlowAnalyzer chapter 3 (referred to as FlowAnalyzer).

33.   In regards to claims 9 and 12, NetFlow and Jalalian disclose the methods of claims 1 and

6. Netflow does not disclose sorting in descending order.

        Page 3-25 of FlowAnalyzer discloses that numeric data can be sorted in descending

order.

        It would have been obvious to one of ordinary skill in the art to sort the data collected by

NetFlow in descending order and taught by FlowAnalyzer.

        The motivation for doing so is given on page 15 of Netflow where it is disclosed that

FlowAnalyzer is meant to function as a part of a family of products. All the functions of

FlowAnalyzer are intended to be available within the system taught by NetFlow.

34.   Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

"NetFlow Services and Applications" (referred to as NetFlow) in view of Jalalian et al. (US

5,548,722) further in view of MacGregor et al. (US 5,396,621).

Netflow and Jalalian disclose the methods of claims 1 and 6, but do not disclose the

columns being sorted in ascending order.

MacGregor et al. discloses in column 10 lines 16-18 that their data can be sorted into

either descending or ascending order.

It would have been obvious to one of ordinary skill in the art to modify Netflow to

accommodate for sorting in ascending order, as taught by MacGregor et al., as well as sorting in

descending order, which is already disclosed by NetFlow.

The motivation for doing so would have been to allow the user to sort and view the data

according to parameters entered by the user as described in column 10 lines 13-18.

Conclusion

35.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

a.   "Computing Resources for Residents" is provided to dormitory residents at the

University of Illinois at Urbana-Champaign. It provides information about the use of

NetFlow to restrict bandwidth to each IP address in order to prevent both service

deactivation and network overload.

b.   Jackowski et al., US 6,141,686, wherein a method for generating and reporting

network statistics is disclosed.

c.   NetFlow FlowAnalyzer chapter 1 provides additional details about the capabilities

available for network and bandwidth management.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kerri M. Dyke whose telephone number is (571) 272-0542. The

examiner can normally be reached on Monday through Friday, 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kmd

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 12/16/05